What is claimed is:

1. A method of detecting an amplitude of an alternating signal in the form of a sinusoidal wave having a period fluctuation within a certain fluctuant range together with an amplitude fluctuation, comprising:

preparing a first and a second all pass filters having phase shift characteristics set to cause a phase delay difference of 90° therebetween on signal transmission within a frequency range corresponding to said fluctuant range of said period;

passing said alternating signal through said first and second all pass filters to generate a first and a second phase-shifted signals with a phase delay difference of 90° therebetween within said frequency range; and

sampling an amplitude of one of said first and second phase-shifted signals at a timing when the other has a phase angle of a certain value.

2. The method according to claim 1, wherein said timing for sampling said amplitude of said one phase-shifted signal is determined as a phase angle of said the other phase-shifted signal when said the other phase-shifted signal has zero amplitude.

3. The method according to claim 1, wherein said first and second all pass filters are the respective ones of n first and n second all pass filters prepared to generate n first and n second phase-shifted signals, respectively, the n first phase-shifted signals being different by a phase angle

of 360° /n from each other, the n second phase-shifted signals being different by a phase angle of 360° /n from each other(n denotes a positive integer).

4. The method according to claim 3, comprising sampling an amplitude of each in one of n first and n second phase-shifted signals at a timing when the corresponding other phase-shifted signal has zero amplitude.

5. The method according to claim 1, wherein said alternating signal is an output signal from an instrumentation sensor.

6. A circuit for detecting an amplitude of an alternating signal in the form of a sinusoidal wave having a period fluctuation within a certain fluctuant range together with an amplitude fluctuation, comprising:

a phase revising circuit including a first and a second all pass filters with 90° phase-shifted different frequencies for passing said alternating signal through said first and second all pass filters to generate a first and a second phase-shifted signals with a phase delay difference of 90° therebetween within a frequency range corresponding to said fluctuant range of said period; and

a sampling circuit for sampling an amplitude of one of said first and second phase-shifted signals at a timing when the other has a phase angle of a certain value.

7. The circuit according to claim 6, further comprising a pulse generator for detecting a zero cross point of said the other of first and second phase-shifted signals to

generate a sampling pulse supplied at each zero cross point to said sampling circuit.

8. The circuit according to claim 6, further comprising:

a full-wave rectifier for rectifying full waves of said one of first and second phase-shifted signals to provide a rectified output to said sampling circuit; and

a pulse generator for detecting a zero cross point of said the other of first and second phase-shifted signals to generate a sampling pulse supplied at each zero cross point to said sampling circuit.

9. The circuit according to claim 6, comprising n amplitude-detecting units, wherein each amplitude-detecting unit includes said phase revising circuit and said sampling circuit, the first phase-shifted signals in the respective amplitude-detecting units being different by a phase angle of 360° /n from each other, the second phase-shifted signals in the respective amplitude-detecting units being different by a phase angle of 360° /n from each other(n denotes a positive integer).

10. The circuit according to claim 6, wherein said alternating signal is an output signal from an instrumentation sensor.